



# **Southern California Firestorm 2003**

## **Report for the Wildland Fire Lessons Learned Center**

*For:*  
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This report was prepared by two private consulting firms with the input of federal agency employees assisting the Wildland Fire Lessons Learned Center.



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**The following is an excerpt from the entire report.  
It is suggested that the reader also view the  
Introduction to the report to put this section into  
context.**

# Interagency Cooperation

This section describes the lessons learned regarding interagency cooperation.

## Effectiveness of Interagency Cooperation

*The value of interagency cooperation paid off. "Everyone spoke the same language."*  
**Battalion Chief**

Despite the normal difficulties associated with interagency cooperation, those interviewed overwhelmingly stated that cooperation between agencies was extremely strong and was a key factor in being able to deal with a series of crises of this magnitude.

Leaders stated that where interagency cooperation was established and routinely in practice before these fires, the response was more effective. In the areas where cooperation had to be established as operations were occurring, the response was less effective.

Respondents said that the Incident Command System (ICS) proved its worth as common doctrine. ICS provided common ground around which diverse cooperators could rally and begin to function effectively, even in the initial absence of effective, centralized command.

### **Summary of Lessons Learned—Effectiveness of Interagency Cooperation**

- Strong interagency cooperation practiced by many agencies in Southern California had a direct positive impact on the ability to manage these incidents.
- ICS was rated invaluable as the common doctrine to facilitate interagency cooperation and establish and exercise effective unified command.

## Interagency Training

Respondents believed that interagency training had an impact on how effectively responding agencies coordinated their response to these incidents. They felt that agencies that had trained together were able to establish a unified command faster and had a more effective response. Agencies that provided ICS training down to the tactical level were decidedly more effective prior to the establishment of unified command, as well as after it had been established. Respondents reported that joint training with ancillary agencies, such as the Red Cross, exposed firefighters to the planning and operational considerations of cooperators and gave cooperators training needed to function in the wildland fire environment.

Respondents indicated that tabletop planning and exercises proved especially important in those areas with strong pre-incident planning. Joint sessions brought cooperators together and enabled them to identify and plan for areas likely to be impacted by WUI fires. This planning involved reviewing fire history records, conducting fire hazard analyses, and having leaders talk through the planning and response issues. This process

provided the opportunity to become familiar with local areas and cooperators and allowed cooperators to “work-out the bugs,” identifying opportunities and potential problems.

Respondents said they would like to see the same kind of training done at the tactical level with firefighters. Agencies with responsibilities in the WUI conducted training sessions to plan strategy and tactics and walk through an anticipated incident. Fire managers simulated the fire suppression planning and execution with engine and hand crews walking through their expected activities such as engine crews driving into WUI neighborhoods, implementing triage procedures, and practicing tactics.

Structural and wildland leaders reported that municipal and county fire departments that had participated in WUI fire training programs were better prepared to respond to this type of incident over those that did not. Although respondents indicated that serious improvements are still needed in the training and standards, those who participated in the California Office of Emergency Services (OES) wildland fire curriculum believed they were better prepared to function as part of a strike team. Other departments had taken advantage of training provided by cooperator agencies or their own wildland divisions for training. Respondents felt that those who did not have that training were exposed to greater risks by being less familiar with wildland tactics and not fully understanding their role in a strike team.

#### ***Summary of Lessons Learned—Interagency Training***

- Agencies that trained together were able to function more effectively as a unified command team. This was true at the tactical level as well.
- Interagency training with cooperators provided valuable pre-incident planning as well. Tabletop and walk-through exercises were cost-effective ways to plan for incidents and build relationships.
- Structural units and leaders who had received wildland training were more effective and safer as single resources or part of a strike team operating in the WUI. Those without the training were not proficient in wildland tactics.

## **Interagency Relationships**

*Making a fire successful begins years in advance.*  
**- Type 1 Incident Commander**

Nearly universally, respondents reported the importance of trust, developed through established personal and professional relationships with peers and cooperators. During the initial chaos of these incidents and at the times when dispatch and incident command systems were overwhelmed, these relationships became the primary means by which things got done, until the system could be brought on-line. These networks, enabled by these relationships, were frequently the primary force behind successful operations.

Respondents also reported that networks of personal relationships minimized unproductive conflict. In situations where conflict did occur—sometimes under incredibly stressful conditions—it was often resolved by leaders who sought out their counterparts for face-to-face meetings. At the management level, agencies that had ongoing programs to foster relationships with important cooperators, media, politicians,

and communities were more effective at managing information and negative perceptions than those without such programs. These programs build support by participating in important community events, such as ride-alongs for influential contacts and media and regular briefings on projects and activities.

#### ***Summary of Lessons Learned—Interagency Relationships***

- A strong network of interagency cooperation, based on personal and professional relationships, was critical in responding quickly and establishing command and control in such a chaotic environment.
- Face-to-face meetings were far more effective at resolving conflict under stressful conditions than relying on radio or telephone, especially at the tactical level.
- Ongoing contact programs made relationships with the community and the media more effective and efficient.

## **Communications Systems Interoperability**

*Without communication, all you have is independent action.*

**Emergency Operations Coordinator Captain**

Municipal and county fire departments in California have all converted to an 800 MHz radio communication system. Virtually every respondent cited the incompatibility between this communications system and the VHF systems used by state and federal agencies as the largest problem encountered on these fires. Radio interoperability problems caused coordination problems between cooperating agencies, command and tactical units, air and ground units, and even between engines on the same strike team. Units became temporarily unaccounted for and were unable to communicate their status, placing firefighters at unnecessary risk.

In one case, respondents reported the lack of communication system interoperability contributed to two structure protection groups being created and tasked with staging and deploying resources as the fire entered a city, even though neither group was aware of the other's existence. Unit leaders in the WUI zone and within the urban environment could not determine where or when ordered resources were arriving. Communication problems prevented effective situation awareness from flowing from resources back up to unified command. Resources lost local knowledge of neighborhoods, streets, planned actions, and analysis of defensible/non-defensible areas.

As the structure protection group leaders recognized the communications disconnect, they took the initiative to find each other, meet face-to-face, and resolve the situation. Once this error chain was broken, resources began to flow to critical areas and the IMT started receiving more accurate situation awareness from resources in the city.

Leaders repeatedly reported that the most effective way to overcome communications incompatibility and conflicts was to meet face-to-face to coordinate. However, while leaders were engaged in face-to-face discussions, they could not always give updates and new information to resources under them. In many areas, especially those protected by resources that were not local to the area, leaders reported this information gap caused a

hesitancy to engage because they felt they faced increased risk resulting from the lack of communication. Other units, recognizing the lack of communication, were forced to exercise their initiative and take independent action in areas where they felt the situation and the values at risk required it.

Fire departments that coped best with radio communications interoperability had equipped their command vehicles with radios that enabled them to monitor multiple channels and talk with USFS/CDF incident networks. Many units have created workarounds that prove adequate for one incident. For example, some Battalion Chiefs carry one to six handheld radios compatible with cooperating agency frequencies. However, this workaround had limitations. During a series of disasters as was the case in Southern California, the result was that both systems became so overwhelmed with radio traffic that it was impossible to monitor all traffic back and forth. As a result, respondents said that people tended to default back to their own frequencies, degrading common tactical and command communications.

Cell phones were heavily used to overcome communications problems. This strategy worked well, but some areas lost cell towers or experienced power outages because of the fire. Cell systems were overloaded by overwhelming phone use, and cell phone use was affected accordingly.

Because of dire need for resources, units reported they were being dispatched directly to assignments on the line. Incident leaders stated they began to route incoming resources through staging areas to make sure that they were briefed face-to-face and had a workaround for the communications issue. Law enforcement was instructed to help direct incoming resources to the structure group or branch staging area. Leaders said they helped to overcome the communications incompatibility issue by pairing crews and vehicles equipped with VHF radios with crews and vehicles equipped with 800 MHz radios within strike teams and by re-distributing handheld radios.

#### ***Summary of Lessons Learned—Communications Systems Interoperability***

- Because the 800 MHz municipal and county communications system is not compatible with the state and federal VHF systems, command and control was severely disrupted and firefighters faced dramatically increased risk because of communications problems. Normal workarounds for incompatible communication systems were not sufficient for these incidents.
- Face-to-face coordination was the most effective means to resolve problems in the absence of communication interoperability but had a direct impact on leaders' abilities to stay in communication with subordinates.
- Because of the radio incompatibility, municipal and county department command vehicles with VHF capability allowed leaders to be far more effective than those without.
- Cell phones were effective in overcoming communications problems because of the complete coverage in the region but were unreliable when power failed or cell towers burned. Some cell networks were overloaded, preventing calls.

- Leaders began running incoming resources through a choke point to brief and pair or cross-level communications so that each division or group supervisor, crew leader, or strike team leader could reliably communicate.

## Integration of Pre-Incident Planning Information

Respondents reported that many local agencies had master plans and other planning documents prepared that showed previous burns, fuel types, structure and neighborhood analysis on defensibility, evacuation routes and sites, staging areas, helispots, and water sources.

They felt the challenge came with trying to disseminate this information at all levels. On occasion, commanders and their staffs reported they were making decisions without benefit of planning information, or resources were assigned to gather information even though that information was available in planning documents. Non-local engines and crews reported operating in several watchout situations, in unfamiliar WUI neighborhoods without knowing egress routes, and in situations in which they triaged structures that had already been triaged.

Where pre-incident planning information was well integrated, respondents rated it as invaluable. Incident commanders stated that when available, the information allowed more effective decisions concerning overall strategy and tactics. Ground resources reported that the information saved valuable time in allowing quicker triage and in maintaining broader situation awareness of their operating areas.

The respondents who reported the most success were the local agencies that brought local planning information to the Incident Command Post and ensured that it got incorporated into the planning process. Or from the opposite end, the incident management teams that proactively reached out and requested the information.

Some structure protection group supervisors and branch directors consolidated the available planning material, including maps and summaries of local factors, and had copies of critical information ready to distribute to incoming resources at staging areas. This effort gave incoming resources more confidence to operate and mitigated many of the risks of working in unfamiliar areas.

Several respondents felt that integrating pre-incident planning data represented an area for improvement, noting that information could be exchanged and briefed during already established interagency meetings and training sessions. Many felt this was a prime area to develop a multi-agency database, using available GIS (Geographic Information Systems) tools, to help prepare for incidents.

### ***Summary of Lessons Learned—Integration of Planning Information***

- Most of the critical data to support strategic and tactical decision-making existed in pre-incident planning documents, but in general it was not effectively integrated into incident and unified command. When it was, respondents found it extremely valuable—they said it should be “pushed, pulled, or dragged” into the incident command.



- When this information got disseminated down to division and group level, it enabled more effective tactical planning and increased the situation awareness of ground resources.
- Many leaders rated the integration of pre-incident planning information as an area for improvement using existing interagency meetings or developing a GIS-based system.

## Unified Command and Liaison/EOC Integration

In general, all respondents were very supportive of unified command and how it functioned. Yet these incidents presented incredible challenges to unified command. Many times the situation was developing too fast for unified command to keep up. Unified action among agencies was essential. In practical terms, given the fast-moving and chaotic circumstances, collaborative and unified tactical action on the ground was often more effective than unified, centralized command and control.

Unified command proved far more effective when agency representatives had the authority to make decisions on behalf of their agency concerning resources and strategy.

Most respondents said it was initially difficult to shift thinking from wildland fire incident to firestorm and conflagration. The Type 2 and Type 1 Incident Management Teams (IMT) that were most effective in minimizing damage in the WUI were those that could make this shift in thinking early and incorporate local municipal and county fire department commanders into the command organization. This allowed local knowledge, experience, and planning to be incorporated into the strategy and tactics more quickly. How this information was integrated varied by IMT. Some sought out local chief officers; others encountered chief officers who asserted themselves into the existing IMT organization.

In cases where one or more senior officers from a fire department were located at the ICP and local Emergency Operations Centers, they said it was easier to coordinate actions, adapt to rapidly changing tactical conditions, and integrate the city or county dispatch system into both the IMT planning cycle and the interagency dispatch system. Respondents indicated that senior department chiefs felt an obligation to stay in their districts, and that to effectively involve chiefs in unified command required a liaison to represent the chief at the incident command post (ICP).

Senior leaders reported that having city or county chief officers at the ICP allowed the transition to unified command to occur far more efficiently, especially with the inherent problem of communications incompatibility between the 800 MHz municipal and county and VHF state and federal systems. They believed local knowledge was integrated more effectively to help shape and coordinate plans, operations, and contingencies.

Incident command and staff said that law enforcement agencies, transportation departments, utilities, and others needed to be co-located in unified command. Respondents said they would like to see plans targeting ICPs and planned trigger points to establish unified command and dispatch its staffing. For example, when a trigger point for evacuations is reached, the sheriff's office, highway patrol, and department of transportation would move toward a planned ICP and deputies would move to traffic chokepoints. If evacuation is needed, deputies are already on site.

### ***Summary of Lessons Learned—Unified Command and Liaison/EOC Integration***

- The fires were so large and fast-moving that agencies established unified command, first as collaborative action, then transitioned later to centralized command. Pre-selected ICP locations and evacuation choke points for law enforcement were found helpful.
- Many times municipal and county fire leaders were not integrated into incident command effectively, losing valuable local knowledge. Success came from integrating municipal and county fire liaisons with decision-making authority into the command team early.
- Establishing liaison with local Emergency Operations Centers (EOC) as early as possible was effective in coordinating the integration of initial attack resources from multiple jurisdictions.
- Co-locating with law enforcement and other agencies was effective in coordinating effective evacuations in concert with incident strategy and tactics.

## **JIC and Information Management**

Respondents said that establishing a multi-agency Joint Information Center (JIC) had a significant positive effect on the timeliness and effectiveness of information management when compared to large incidents that did not use a JIC.

Respondents who had been through these kinds of experiences before, indicated that large, multi-agency incidents usually receive national or even worldwide attention, and that was true here. They have seen an individual agency's public affairs staff become overwhelmed in a short amount of time. On these incidents, public affairs staffs needed to think well beyond the routine information officer function. Since resources come from around the country, the media had diverse interests in the stories. Public affairs staffers received questions such as "What are the crews from Las Vegas doing on the incident?" Consequently, successful information efforts focused on a broader audience than normal.

Leaders reported that the public and the media went to any reasonable location with significant activity to try to get information. Air tanker bases and other centers of activity away from the ICP or JIC had media show up and managers there said they needed information officers assigned during events of this size and scope. The JIC combined the public affairs resources of numerous agencies and brought in extra staff as needed as the incident developed. The JIC took advantage of full-time and professional public affairs staff of city and county cooperating agencies, combining them with the technical expertise of the wildland agencies.

Many respondents reflected that information efforts did not consider some unique factors in a major media market like Los Angeles or San Diego. They felt the information campaign must consider the impact of commercial mass media, including talk radio, in shaping public opinion. In one case, talk radio hosts significantly drove public opinion, with very negative influence. Consequently, respondents felt that at a time when the community needed to pull together, it was being divided over information provided by a popular radio host with national exposure. Instead of focusing on its mission of getting

information out to the public, the information function had to focus on the distraction of defending itself against attack.

During these fires, the distinctions between agencies disappeared in the public's mind. Those interviewed warned that one agency's actions will become associated with all agencies. A centralized JIC public affairs effort allowed agencies to project a proactive, unified message to the media and the public, which was critical in communicating the latest fire and evacuation information to the public. Several respondents mentioned that the California Highway Patrol does a daily TV (and radio) traffic report in which a professional looking, well-spoken officer gives the traffic conditions, followed by a safety tip. They would like to see wildland fire agencies do the same.

A proactive, well-staffed JIC not only provided current information but also helped form public opinion. Senior leaders said it was important to tell the success stories of fuels hazard reduction programs in order to gain political and public support for future efforts.

In situations where a JIC was not established, many respondents reported the public and media received fragmented and often conflicting and confusing information—and different agencies had different information at different times. Rumors circulated, and the public and media filled the information voids with whatever voices were available. This usually did not reflect well on the responding agencies and created firefighter morale problems as they and their efforts were portrayed inaccurately.

In the areas that had a planned JIC function, the first players were up and running within 24 hours, and the JIC was fully functional in 36 hours. Several respondents agreed that they would like the concept to go further to see JIC staff pre-identified and designate planned JIC locations throughout the region.

The Emergency Alert (EA) system was not employed early in some of the fires. The Emergency Alert system could be used to more quickly alert people to the fire's status and resulting evacuations and evacuation warnings—just as for hurricanes and tornados.

#### ***Summary of Lessons Learned—JIC and Information Management***

- Where a JIC was established, it had a positive effect on the timeliness and quality of the information campaign in the WUI environment.
- These incidents received international attention and the need for an information campaign reached a threshold much larger than any one agency could manage effectively. The JIC combined the people and unique strengths of different agencies public affairs staffs.
- On several incidents, the information effort remained defensive. The JIC allowed a unified message presented to the public and the media. The JIC could communicate key fire management issues (the use of air tankers, the need for defensible space) and address these issues proactively through public information while fires held the public's attention.

#### ***Summary of Lessons Learned—JIC and Information Management—continued***

- Having a JIC plan in place ahead of time was effective. Respondents identified the further need to pre-identify JIC staff and expanded JIC staff, and identify potential JIC locations in the area.
- Areas that activated the EA system early were able to provide information to residents and facilitate evacuation planning more efficiently than those areas that waited to use the EA system until later.

## **Mountain Area Safety Taskforce (MAST)**

*We spent a lot of time thinking about our strategies and tactics before we ever needed them.*  
- MAST Community Fire Chief

The Mountain Area Safety Taskforce (MAST) is a county organization composed of local, state, and federal government agencies, private companies, and volunteer organizations. Among other things, these organizations are tasked with assuring public safety through the development of evacuation plans, hazard tree and fuel removal, and planning and public information.

Both San Bernardino and Riverside counties both have MAST organizations. Every respondent that participated in fires in San Bernardino and Riverside Counties (as well as many respondents who did not) rated the organization as a resounding success. There is no question in the respondents' minds that the MAST effort, including training and planning, saved a large number of lives and homes. Respondents indicated that MAST planning cut 2 to 3 days off of the time required to establish an effective multi-agency, unified command.

During roughly 18 months of pre-fire planning, MAST organized using ICS and operated as an IMT would run an incident. A multi-agency coordination (MAC) group comprised of elected officials and agency administrators was established as the governing body. Unified command was established, and the IMT answered to the MAC group. Incident commanders worked for the MAC. The organization included command and general staff positions responsible for operations, logistics, planning, finance, safety, and liaison as well as units developed within each of those sections. MAST included non-emergency response agencies (transportation and roads, utilities, solid waste management, air quality management district (AQMD), and elected officials from all levels.

The MAST had conducted tabletop rehearsals of evacuations in the event of catastrophic wildfires. As a result, nearly 100,000 people were evacuated quickly and without incident.

MAST organization prepared a training video for law enforcement officers (basic fire behavior, ICS), and all law enforcement agency leaders had trained all their personnel prior to these fires. These efforts proved instrumental, allowing law enforcement agencies to seamlessly pull together into the unified command vs. the traditional approach of a separate law enforcement command structure and ICP.

The MAST had worked with the AQMD to approve use of air curtain burners (authorized up to eight) to dispose of cut brush and trees from private property.

***Summary of Lessons Learned—Mountain Area Safety Taskforce (MAST)***

- The MAST was a very successful template for multi-jurisdictional planning in the interface. MAST planning was estimated to have cut two to three days off the time it took to establish effective unified command. Information is available at [www.calmast.org](http://www.calmast.org).
- The MAST functioned using the Incident Command System in a unified command. This proved to be an effective rehearsal for the real thing. Tabletop rehearsals of evacuations were very effective in facilitating live evacuations.
- The MAST was an effective vehicle for distributing training and local knowledge to participating agencies.
- The MAST was effective at accomplishing projects by planning projects with the input of environmental and infrastructure agencies.